

A<sup>2</sup>

Any of the methods previously described for the insertion of DNA fragments into a vector can be used to construct expression vectors containing a chimeric gene consisting of appropriate transcriptional/translational control signals and the polypeptide coding sequences. These methods include *in vitro* recombinant DNA and synthetic techniques and *in vivo* recombinants (genetic recombination). Expression of nucleic acid sequences encoding a Rn3 polypeptide or fragment can be regulated by a second nucleic acid sequence so that the Rn3 polypeptide or fragment is expressed in a host transformed with the recombinant DNA molecule. For example, expression of a Rn3 polypeptide can be controlled by any promoter/enhancer element known in the art. Promoters which can be used to control *RRN3* gene expression include, but are not limited to, the SV40 early promoter region (Benoist and Chambon, *Nature* 290:304-10 (1981)), the promoter contained in the 3' long terminal repeat of Rous sarcoma virus (Yamamoto *et al.*, *Cell* 22:787-97 (1980)), the herpes thymidine kinase promoter (Wagner *et al.*, *Proc. Natl. Acad. Sci. USA* 78:1441-45 (1981)), the regulatory sequences of the metallothionein gene (Brinster *et al.*, *Nature* 296:39-42 (1982)), prokaryotic expression vectors such as the  $\beta$ -lactamase promoter (Villa-Komaroff *et al.*, *Proc. Natl. Acad. Sci. USA* 75:3727-31 (1978)) or the *tac* promoter (deBoer *et al.*, *Proc. Natl. Acad. Sci. USA* 80:21-25 (1983)), plant expression vectors including the cauliflower mosaic virus 35S RNA promoter (Gardner *et al.*, *Nucl. Acids Res.* 9:2871-88 (1981)), and the promoter of the photosynthetic enzyme ribulose biphosphate carboxylase (Herrera-Estrella *et al.*, *Nature* 310:115-20 (1984)), promoter elements from yeast or other fungi such as the *Gal7* and *Gal4* promoters, the ADH (alcohol dehydrogenase) promoter, the PGK (phosphoglycerol kinase) promoter, the alkaline phosphatase promoter, and the like.

Please delete the paragraph beginning at page 60, line 24, and insert the following:

A<sup>3</sup>

A recently reported human EST (gb|AW239267, which corresponds to nucleotides 1661 to 2068 of SEQ ID NO:1) encodes an additional 3' portion of the human *RRN3* cDNA. The full length cDNA thus encodes a polypeptide of 651 amino acids with

A3  
cancel  
a predicted molecular mass of 74 kD, which is similar to that of TIF-1A. The sequence of the human *RRN3* open reading frame has been deposited in the GenBank database (Accession No. AF227156).

Please delete the paragraph beginning at page 62, line 3, and insert the following:

A4  
To confirm that the human cDNA encodes a polypeptide which is related to yeast Rm3, the human and yeast *RRN3* cDNAs were expressed in *E. coli* as 6-His fusion proteins and subjected to Western blot analysis. Full length yeast or human *RRN3* coding sequences were subcloned into pRSET vector (Invitrogen) to generate 6-His tagged proteins for expression in *E. coli*.

IN THE CLAIMS:

Kindly replace claims 1, 2, and 7 with the following substitute claims. An Appendix setting forth the amended claims showing all changes is provided as required under 37 CFR § 1.121(c).

- A5
1. (Amended) An isolated and purified nucleic acid which hybridizes under stringent conditions comprising hybridization in aqueous solution containing 4-6x SSC at 65-68° C, or 42° C in 50% formamide, to a polynucleotide that codes for human *RRN3* polypeptide, or the full length complement of the polynucleotide, wherein the Rm3 polypeptide which Rm3 polypeptide stimulates ribosomal RNA transcription, comprises the contiguous amino acid sequence of SEQ ID NO:2, or a fragment thereof.
  2. (Amended) The nucleic acid of claim 1, which is genomic DNA, cDNA, or RNA.